

SUB L17  
K2

20. (Four Times Amended) A semiconductor device having a first vertical type bipolar transistor and a second vertical type bipolar transistor having a breakdown voltage that is higher than a breakdown voltage of the first vertical type bipolar transistor, said first vertical type bipolar transistor and said second vertical type bipolar transistor each having an emitter, a base, and a collector, the semiconductor device comprising:

- a substrate of a first conductive type;
- an epitaxial layer formed on the substrate;
- a first embedded diffusion layer formed as a part of the collector of the first vertical type bipolar transistor in a first upper part of the substrate and in the epitaxial layer;
- a second embedded diffusion layer formed as a part of the collector of the second vertical type bipolar transistor directly on the substrate, in a second upper part of the substrate;
- a base layer disposed between two first graft base layers and disposed above the first embedded diffusion layer on the epitaxial layer to define a first epitaxial thickness between the first base layer and the first embedded diffusion layer; and
- a second base layer disposed between two second graft base layers and disposed above the second embedded diffusion layer on the epitaxial layer to define a second epitaxial thickness between the second base layer and the second embedded diffusion layer,

wherein the first epitaxial thickness is less than the second epitaxial thickness, and  
wherein only the epitaxial layer is disposed between the base layer and the second embedded diffusion layer.